# EXPERIMENTAL PRODUCT DESCRIPTION DOCUMENT

# Local 3-Month Outlooks

**APPROVED_____Date:_____**

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# Local 3-Month Outlooks (experimental)
## Product Description Document

### Part I - Mission Connection

*NOAA's Strategic Vision for 2005 – 2010, New Priorities for the 21st Century*, establishes a mission goal to "understand climate variability and climate change to enhance society's ability to plan and respond" (http://www.spo.noaa.gov/noaastratplanning.htm ). One strategy within this goal is to assess and predict climate. The *National Weather Service (NWS) Strategic Plan for FY 2005 – 2010* supports this goal by using the growing climate expertise at local NWS forecast offices to "enhance regional specificity of climate forecasts for local customers and partners" (http://www.spo.noaa.gov/losps.htm ). Currently, NOAA's Climate Prediction Center (CPC) creates 3-month climate outlooks across the United States. In response to the NOAA and NWS goals, the CPC outlooks will be extended to specific locations within the NWS Weather Forecast Office (WFO) local forecast area to provide an enhanced level of detail and usability to the CPC 3-month climate outlooks.

**a. Product Description**

Local 3-Month Outlooks (L3MO) will be produced for about 10 sites in each NWS WFO forecast area across the continental U.S. and Alaska. The first L3MO product will be for 3-month mean temperature (L3MTO) with 3-month precipitation becoming available in the same format in the future. These outlooks will be based on the guidance provided in the CPC Probability of Exceedance (POE) 3-month outlooks. The L3MTO will use local climatological biases together with expected regional climate variability derived from the more general CPC outlooks. These outlooks will be provided in graphical, tabular, and text formats, and will be available via the NWS WFO Web pages concurrent with the issuance of the CPC 3-month outlooks. The L3MTO will consist of thirteen 3-month temperature outlooks for each specified site. The L3MTO product suite will consist of outlooks with lead times from 0.5 months to 12.5 months. For example, on the third Thursday in July, a series of L3MTOs for August through October, September through November, etc. out to 1-year lead time, will be issued.

**b. Purpose and Intended Use**

The purpose of the L3MTO is to provide a greater level of detail to all customers within the area of responsibility of the NWS WFO. The CPC 3-month outlooks are based on average predicted conditions over large geographical areas. Increasing the specificity of the more general CPC outlooks is expected to increase the outlooks' use by local customers and partners. Over time, and with customer outreach and education, it is expected that customers will be able to use these local climate outlooks to help mitigate economic losses and/or maximize economic gains.

**c. Audience**

The audience for the L3MTO includes the general public, federal, state, and local emergency management agencies, mitigation and risk management specialists in all sectors of society, farmers, energy providers, the media, and all others in need of local climate outlooks. This product is available to all who have an Internet connection.

**d. Presentation Format**

The L3MTO will be available on the Internet from the WFO Climate Web pages and will consist of a variety of graphs and corresponding tables and text. All L3MTO products for each location can be accessed using several web navigational tools embedded in the graphics of national and local web pages and through the four main tabs located on each L3MTO web page. These tabs include links to the National outlook, Local outlook, Background information, and Questions and feedback.

The National Outlook Tab contains the CPC 3MTO in map format with links to other seasons available using a dropdown menu. The Local Outlook tab provides access to L3MTO information in the form of Pie charts, Temperature Range Graphs, and POE Graphs, each supported by text statements and tables with numeric data. The Background Information tab presents the web navigation for different L3MTO web pages as well as provides links to various support documents. The Questions and Feedback tab provides an e-mail link to ask questions and a web form to collect feedback.

**e. Feedback Method**

We are always seeking to improve our products based on user feedback. Comments regarding the L3MTO will be addressed through an OPM-approved feedback mechanism from July 20, 2006 through August 20, 2006 at the web address below, via link to the WFO area of user interest:

http://www.weather.gov/climate/l3mto.php

## Part II – Technical Description

**a. Format and Science Basis**

Currently, NOAA's CPC creates 3MTO for 102 climate outlook divisions across the United States. A sample forecast and map of the climate divisions can be found at the following web address: http://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead01/poe_index.html .

The L3MTO is an extension of CPC's 3MTO, to local specific sites. The extension is based on a correlation between 1971-2000 climatological data at local sites and their respective climate outlook division. A regression equation (in the form Y = mX + b, where m is the slope and b is the y-intercept) is developed for each of the twelve 3-month period mean values. Additional adjustments are made to the y-intercept to account for any statistically significant trend in the later (after year 2000) data at the station and the climate outlook divisions. The L3MTO is produced by solving the equation above using the mean of the current outlook for the climate outlook division. This provides an estimate for the local sites outlook mean. To estimate the local outlook standard deviation, the 1971-2000 local site standard deviation is used together with the correlation coefficient from the regression analysis and a correlation skill score for the current CPC 3MTO. Normal distribution properties together with the L3MTO mean and standard deviation, are used to compute different outlook values for the various supporting products.

**b. Product Availability**

The L3MTO will be available on each NWS WFO Internet site on the same day as the issuance of the CPC 3-month outlooks, which is the third Thursday of each month.

**c. Additional Information**

The National Climatic Data Center (NCDC) provided an experimental homogenized and serially complete dataset for the historical station data, which included: monthly/daily value internal consistency check, bias adjustment to a midnight-to-midnight observation schedule, spatial quality control, artificial change point detection and adjustment, and estimation of missing or discarded data. No special software is necessary to display the outlooks. Additional information on the CPC outlooks may be obtained at http://www.cpc.noaa.gov. Additional documentation for Probability of Exceedance 3-month outlooks are available at http://www.cpc.ncep.noaa.gov/pacdir/NFORdir/INTR.html .